REF 7/C

Year XII December, 1938 No. 12

INTERNATIONAL INSTITUTE OF AGRICULTURE

INTERNATIONAL BULLETIN OF PLANT PROTECTION

PUBLISHED MONTHLY

REPRINT FROM THE 'INTERNATIONAL REVIEW OF AGRICULTURE'

CONTENTS

Discoveries and Current Events. — Eritrea: Locust Movements, p. 265. – Mozambique: Red Locust, p. 265. – Rumania: Diseases and Pests Noxious to Crops, p. 266. – Switzerland: The Colorado Beetle Situation in 1938, p. 267.

Legislative and Administrative Measures. — Algeria, p. 269. – Germany, p. 270. – Germany (Prussia), p. 271. – Germany (Schaumburg-Lippe), p. 271. – France, p. 271. – Italy, p. 272. – Morocco (French Zone of), p. 273. – Mexico, p. 273. – New Zealand, p. 273. – Switzerland (Canton of Vaud), p. 273. – Tunis, p. 273. – Uruguay, p. 273.

Recent Bibliography, p. 274.

Notes. — XVIIIth International Congress of Agriculture, p. 288.

IMPERIAL MYCOLOGICAL INSTITUTE
20 DEC. 1938

ROME
VILLA UMBERTO I
1938

NOTICE

The International Institute of Agriculture informs subscribers in the under-mentioned countries that they may pay their subscriptions or remittances to the following Booksellers or Banks:—

France: Société Générale * - 29, Boulevard Haussmann - PARIS IX^e^.

Germany: Bookseller Otto Harrassowitz - Querstrasse 14 - LEIPZIG.

The Netherlands: Rotterdamsche Bankvereeniging N. V. - Contrôle-Afdeeling Postbus c. 77 - AMSTERDAM.

Switzerland: Société de Banque Suisse - ZURICH.

United Kingdom: Booksellers P. S. King and Son, Ltd., Orchard House, Great Smith Street, Westminster, LONDON, S. W. 1.

* *In making payments, subscribers are requested kindly to state on the remittance form:—* 'Compte abonnements CCD. 522.470 – Département de l'étranger, Clients divers.'

IMPORTANT

The prices of all publications issued by the International Institute of Agriculture include postage.

ANNUAIRE INTERNATIONAL DE LÉGISLATION AGRICOLE, 1937

(FRENCH EDITION ONLY)

(1938, XXXVI + 1052 pp., 8vo).

PRICE: **80 lire.** — CLOTH-BOUND: **90 lire**

The reproduction either in whole or in part of material printed in this Bulletin is permitted but only on the express condition that the source is duly acknowledged as follows:— *International Bulletin of Plant Protection* (*International Institute of Agriculture*).

ROME — PRINTING OFFICE 'CARLO COLOMBO.'

CHRONICLE OF THE INTERNATIONAL INSTITUTE OF AGRICULTURE

Permanent Committee of the Institute. — At its October meeting, the Permanent Committee considered all the questions on its Agenda, the most important of which were mentioned in the Chronicle of September 1938. Mr. J. Clyde Marquis, Delegate of the United States of America, was unanimously elected Vice-President of the Institute for a period of three years in succession to Mr. J. J. van Rijn, Delegate of the Netherlands and Netherlands East Indies. The Permanent Committee conferred on Mr. van Rijn the title of honorary Vice-President of the International Institute of Agriculture as an expression of its gratitude for his eminent services to the Institute.

The following were some of the principal items on the Agenda of the October meeting: results of consultation of Governments on international agreements relating to viticultural schedules and the official designation of origin of wines; measures taken in pursuance of the Permanent Committee's decision to create an International Forestry Centre attached to the International Institute of Agriculture; a meeting of experts to consider scientific and technical questions relating to the control of imports and exports of plants and other vegetable products (resolution of the London Economic and Monetary Conference of 1933); consideration of the resolutions of international congresses: consideration of the resolutions passed by the last General Assembly.

Press Communications.

The maize crop of the Northern Hemisphere. — The maize crop of the Northern Hemisphere this year is smaller than that harvested last year but still definitely above the average of the five years 1932 to 1936.

The International Institute of Agriculture now has official crop estimates for about ten countries, including the United States, Romania, Yugoslavia, Italy and Manchukuo, which are the principal producers. The output of these ten countries represents nine-tenths of the total production of the Northern Hemisphere, excluding the Soviet Union, Mexico and China.

There has been a general decrease this year in the area under maize. In the United States, by far the most important producer of the Northern Hemisphere

and of the whole world, with a production equivalent to nearly two-thirds of the world total, the cultivated area was a little smaller than that of last year. The decrease from the average of the period 1932 to 1936 was 7 million acres, or 7 per cent. There was a substantial contraction also in Romania. Of the other countries, Italy and Germany alone show increases in the area cultivated, all other countries that have issued estimates showing areas that are smaller than those of 1937 and, in most cases, below the 1932-36 average.

Weather conditions were on the whole less favourable than in 1937 and yields per acre in the principal producing countries, the United States in particular, are consequently not as high, but they are still distinctly larger than the average obtained in the five years 1932 to 1936.

The International Institute of Agriculture estimates, on the whole, that the total production of the Northern Hemisphere, excluding the Soviet Union, Mexico and China, is roughly 83 million metric tons. At this level it would be 6 per cent. smaller than last year's outturn but 14 per cent. above the average of the five years 1932 to 1936.

The situation of the world cotton market. — According to the International Institute of Agriculture, the chief characteristic of the world cotton market is the existence of large carryover stocks which on August 1, 1938 amounted to more than 5,000,000 metric tons (23 million bales of 478 lb. net weight). 3,000,000 metric tons (14 million bales) of this total consist of cotton produced in the United States. The total is 1,000,000 metric tons (4.6 millions bales), or 25 per cent., in excess of the previous highest, recorded on August 1, 1932. The production of ginned cotton in the year 1938-39 is roughly estimated at 6,500,000 metric tons (30 million bales). This is 24 per cent., less than the outturn of 1937-38 and probably less than the 1936-37 crop but about 1,000,000 metric tons (4.6 million bales), or 10 per cent. more than the previous average production.

This production is alone sufficient to cover amply the consumption requirements of the spinning mills for the whole of the year 1938-39. This implies that no reduction is likely in the large volume of stocks accumulated after the record crop of 1937-38.

Mill consumption in 1937-38 was not as large as in 1936-37 but it was fairly high and illustrates the increase that has taken place in world cotton consumption in the last three years. The average consumption in this period amounted to 6,350,000 metric tons (29.3 million bales) of ginned cotton, or 15 per cent., more than the average of previous years. Last year's figures show the advance made by Indian, Egyptian and sundry cottons at the expense of American.

Despite a marked tendency to reduce sowings, especially in the United States, technical progress resulted in comparatively high unit-yields and the total production was above the average on a smaller area. With the stocks carried over from previous years, total supplies of ginned cotton reach more than 11,500,000 metric tons (53 million bales), or sufficient to supply spinning requirements for two years, despite the high level of consumption. The situation is therefore heavy and, in spite of an appreciable rise in prices between the end of September and mid-October, the market is depressed, especially the American section.

The radio communiqués of the International Institute of Agriculture will be transmitted between 2.45 and 2.52 p. m. on the following days: Thursday, English *and* German *Saturday,* Spanish; *Tuesday,* Italian *and* French.

They will be broadcast from Rome II (245.5 m.) and Rome 2 RO 4 (25.4 m.).

The hour of broadcasts is in Central European Time, which is one hour ahead of Greenwich Mean Time, and 5 hours ahead of Eastern Standard Time in the United States.

INTERNATIONAL BULLETIN OF PLANT PROTECTION

1938 No. 12

DISCOVERIES AND CURRENT EVENTS *

Eritrea: Locust Movements †

Further swarms were reported during the first twenty days of September, 1938. The locusts were yellow in colour and fully developed. During the last ten days of the month, locusts pink in colour and not having attained full maturity were also reported. The latter caused very serious damage to cereal crops and grazing lands, chiefly in the Agordat and Tarchinà districts; in the Tessenei, Tolè and Adi Ugri districts, however, the damage was very slight.

The territories of Agordat, Tarchinà, Tolè, Adi Ugri and also Saganeiti (Azamò Plain) are badly infested. Control operations are giving good results.

In the Agordat area, during their final moults, some of the locusts were found to carry under and on the wings a parasite, not yet determined, of a carmine colour and ½ to 1 mm. in length. Up to the present, no locusts have been found dead through this parasite.

Mozambique: Red Locust §

Nyasa Province. No locust movements were reported in the Porto Amelia and Mozambique districts during May, June and July, 1938.

Zambesi Province. In May and June, no swarms were observed in the Tete district; in July, two swarms were reported passing over the Mutarara district from the north towards the south, on the 20th and 23rd respectively.

* Under this and the next heading the countries are arranged in French alphabetical order.

† Communication from Dr. LUIGI M. BOLOGNA, Chief of the Agricultural Bureau of Eritrea, Asmara, transmitted to the Institute by the Government of the Colony.

§ Communication from Mr. M. C. DE MELLO VIEIRA, Acting Chief of the Agricultural Services (Entomological Section), Lourenço Marques, Mozambique, Portuguese East Africa.

No locusts were observed in the Quelimane district in May; on June 26, however, the Lugela district reported the passing of a swarm of red locusts (*Nomadacris septemfasciata*) moving from the south towards the north-east. No locusts observed in July.

Sul do Save Province. No locusts were reported during May, June and July.

In short, the activity of *N. septemfasciata* has greatly declined throughout the Colony and the general position may be considered satisfactory.

Rumania: Diseases and Pests Declared Noxious to Crops *

The following is a list of the diseases and pests declared noxious to crops in Rumania and against which control measures have been taken:—

Diseases.

Soybean mosaic.
Soybean curly-leaf.
Pseudomomas tumefaciens
Ps. malvacearum
Ps. vesicatorium
Bacillus mori
B. baccarinii
B. amylovorus
Bacterium hyacinthi
Bact. holci
Olpidiaster radicis
Synchytrium endobioticum
Urophlyctis alfalfae
Ur. leproides
Acantostigma parasiticum
Rosellinia necatrix
Ceratostomella ulmi
Ophiobolus herpotrichus
O. graminis
Melanconis perniciosa
Guignardia bidwellii
Endothia parasitica
Plowrightia morbosa
Gnomonia erythrostoma
G. veneta
Neopeckia coulteri
Neocosmospora vasinfecta
Lophodermium pinastri
Leptosphaeria herpotrichoides
Sclerotinia bulborum
Sclerotium tuliparum
Dasyscypha willkommii
Rhabdocline pseudotsugae
Cenangium populneum
Gloeosporium ampelinum
Ascochyta piniperda
Cronartium ribicola
Gymnosporangium sabinae
Melampsora populina
Peridermium pini

Pests.

Heterodera schachti
Aonidiella perniciosa
Dreyfusia nüsslini
Leptinotarsa decemlineata
Epitrix cucumeris
Conotrachelus nenuphar
Platyedra gossypiella
Grapholitha (Cydia) molesta
Ceratitis capitata
Rhagoletis pomonella

* Communication from the official Correspondent of the Institute, Prof. G. ARION, Director of the Plant Protection Service, Ministry of Agriculture and Domains, Bucharest, Rumania.

Switzerland: The Colorado Beetle Situation in 1938 *

By June 10, 1938, in French Switzerland 8 adults of *Leptinotarsa decemlineata* had already been found in vegetables imported from France; 11 adults had been captured outside potato fields; some 20 adults and about 10 egg masses had been reported in the fields; and about 24 adults and some egg masses were noted in or near former foci.

At this period, the Colorado beetle was reported in the cantons of Geneva, Vaud, Neuchâtel and especially in the Bernese Jura.

From June 11 to 20 several further discoveries were reported and controlled in the fields or on the roads, and also on potato crops. In most instances only one, two or three adults were found, very few eggs and rarely any larvae.

The Colorado beetle was reported in the canton of Fribourg also.

From June 21 to 30 numerous cases were reported. As a rule, one or more adults were found, in some cases, one or several egg masses, and in the low-lying areas of the country foci with larvae were becoming increasingly frequent.

From July 1 to 10 the situation undoubtedly became worse. As in the previous weeks, as a rule one or several adults were observed, but accompanied more frequently than before by eggs or even by more or less large and numerous colonies of larvae; in the regions at low altitude, some foci showed larvae in a very advanced stage ready to bury into the ground for pupating, very occasionally nymphs were already to be found.

From July 11 to 20 few fully developed insects were found, the majority of the foci containing colonies of larvae more or less numerous and advanced in development; occasionally nymphs were seen and in rare cases even nymphs having practically completed their metamorphosis and ready to emerge from the soil in the form of the adult insect (2nd emergence of the year).

From July 21 to 31 further reports were chiefly of colonies of larvae more or less numerous, disseminated and advanced in their development. In the majority of foci in the low-lying zones, pupal stage took place rapidly. Numerous adults were found on the ground; occasionally, in some foci, a few adults were noted which had just emerged from the soil (2nd emergence of the year). From this period, foci with larvae were reported at an altitude over 1000 metres.

From August 1 to 10 the number of cases reported slightly decreased. The majority of the foci discovered during this period were attacked foci, *i. e.*, with nymphs in the soil. As they were destroyed as soon as reported, the second emergence of adults would appear to be inconsiderable and the second generation therefore much reduced.

From August 11 to 20 reports of new foci declined still further. The foci discovered usually consisted of colonies of larvae more or less numerous and advanced in their development; according to altitude, nymphs and also adults ready to emerge from the soil or even already emerged were sometimes observed.

* Communication from Dr. F. T. WAHLEN, Director of the Federal Agricultural Experiment Station, Zurich-Oerlikon, Switzerland.

It should be noted that this second emergence of adults was insignificant. Further egg-layings are rather uncommon.

The Valais was added to the list of cantons infested.

From August 21 to 31 the reports of new foci continued to show a very marked decrease. The surveys for this year are ended. The early varieties of potatoes and the greater part of the semi-early and semi-late varieties are now almost entirely harvested.

The extent of infestation in French Switzerland for the period July 1 to August 31, 1938 may be summarized as follows:—

July 1	Cantons of Geneva, Vaud, Neuchâtel, Berne (Bernese Jura) and Fribourg	217 communes infested with at least			1000	foci	
» 10	» »	313	»	»	1600–1700	»	
» 20	» »	385	»	»	2100–2200	»	
» 31	» »	443	»	»	2500–2600	»	
August 10	» »	467	»	»	3000	»	approx.
» 20	Cantons of Geneva, Vaud, Neuchâtel, Berne (Bernese Jura), Fribourg and Valais . .	482	»	»	3300–3400	»	
» 31	» »	496	»	»	3500	»	

* * *

In German Switzerland, during the period May 11 to June 11, 1938, Colorado beetles were found in vegetables imported from France (4 adults), in potato fields (11 adults) and elsewhere (2 adults). These were reported in the cantons of Solothurn, Basel-Land, Aargau, Luzern and Bern.

From June 12 to 28 an adult was found on strawberries imported from France into the canton of Zurich. In some districts of the other cantons already mentioned, besides the adults some egg masses were also observed.

On June 29 the first larvae were reported.

From June 29 to July 12, adults, eggs and larvae were seen at the same time. To the infested cantons Zurich was added.

From July 13 to 26 three other cantons were contaminated, Zug, Thurgau and Basel-Stadt.

From July 27 to August 8 mainly larvae were found.

From August 9 to 22 infestation abated. Occasionally adults of the new generation emerged from the soil. Larvae, nymphs and less frequently eggs were also reported.

From August 23 to September 5 infestation again diminished. Some adult insects emerged from the soil; many larvae, but few eggs and nymphs were reported. At the end of August, surveys ended.

The situation in German Switzerland may be summarized as follows:—

June 12-18	Cantons of Bern, Solothurn, Basel-Land and Aargau	29	communes	infested with	89	foci
June 29-July 12	Cantons of Zurich, Bern, Luzern, Solothurn, Basel-Stadt, Basel-Land, Aargau and Thurgau	50	»	»	71	»
July 13-26	Cantons of Zurich, Bern, Luzern, Zug, Solothurn, Basel-Stadt, Basel-Land, Aargau and Thurgau . .	171	»	»	340	»
July 27-Aug. 8	Cantons of Bern, Luzern, Solothurn, Basel-Land and Aargau	93	»	»	262	»
August 9-22	Cantons of Zurich, Bern, Luzern, Zug, Solothurn, Basel-Land and Aargau	42	»	»	54	»
Aug. 23-Sept. 5	Cantons of Zurich, Bern, Luzern, Zug, Solothurn, Basel-Land and Aargau	14	»	»	22	»

LEGISLATIVE AND ADMINISTRATIVE MEASURES

Algeria. — By Decree of the President of the French Republic, dated June 17, 1938, citrus growers in Algeria are obliged to join the district associations, which in turn are grouped into a compulsory Union.

The district associations and the Union are required, *inter alia*, to ensure the application of all measures aiming at organizing and improving the control of parasites.

This obligation to join a district association will not apply to persons growing a few trees in their garden for family consumption. To enable an effective control of the parasites to be carried out, however, these persons will be required to apply the protective measures prescribed for this purpose by Decrees of the Governor General of Algeria. (*Bulletin de l'Office de Renseignements agricoles*, Paris, 1er juillet 1938, année 1938, nº 13, p. 333-334).

*** By another Decree of the same date, cotton cultivation may only be undertaken in Algeria within the recognized cotton-growing districts, the limits of which are fixed or modified, after investigation, by Decree of the Governor General of Algeria.

In order to carry out an effective control of the parasites, protection zones will be erected in these districts extending both over areas where cotton is cultivated and also over neighbouring estates where the Governor General of Algeria may prescribe—by Decree, and in accordance with the opinion of the advisory Committee for irrigation works—all necessary control measures.

In each cotton-growing district, cotton-growers are obliged to join a local association. (*Ibid.*, p. 335).

*** By Decree of August 5, 1938, an additional credit of fifty thousand francs has been allotted to the Hamma Experiment Garden and Experiment Stations for the working expenses of the Committee for the study of locust biology. (*Journal officiel de l'Algérie*, Alger, 2 septembre 1938, XII[e] année, n° 35, p. 1494).

Germany. — By Circular of May 25, 1938 on the costs of joint control measures against rats, certain details are given in explanation of the previous Circular of January 11, 1938 [see this *Bulletin*, 1938, No. 6, p. 125].

It is confirmed that proprietors and others concerned may be obliged to destroy rats and organize joint control operations. The dates for this joint action may also be made compulsory. As a rule, those concerned may choose the means of control they will use provided that these are among the officially recognized and authorized preparations, listed in an appendix to this Circular. They may carry out the operations themselves or entrust them to individuals or concerns specializing in the matter; the cost will in any case, be borne by the proprietors. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. August 1938, Bd. X, Nr. 6, S. 125-126).

*** By Decree of July 1, 1938 on the control of the musk rat (*Fiber zibethicus*), the import, transit and transport of live musk rats, as well as breeding or keeping them are prohibited.

The local police authorities must be informed as soon as the presence of musk rats or traces of their presence are observed.

Persons officially engaged in the control of musk rats and hunters responsible for control operations will have free access to all lands and hydraulic installations; for this purpose they will be provided with a special authorization.

The competent authorities may also empower persons whom they consider suitable to trap these rats. (*Ibid.*, S. 123-125).

*** By Notification of July 2, 1938, new regulations have been laid down for the organization of the Plant Protection Service.

The duties of the Service have been defined as follows: theoretical and practical instruction of those concerned in plant diseases and pests and methods of control; advanced instruction for those in charge of the regional Plant Protection Centres; phytosanitary inspection of crops and stocks, technical supervision of control operations, regular reports to the ' Biologische Reichsanstalt für Land-

und Forstwirtschaft' at Berlin-Dahlem on the diseases and pests observed, cooperation in work on the efficacy of control methods and the resistance of cultivated plant varieties to pests and diseases.

The Plant Protection Service is placed under the control of the Minister of Agriculture (' Reichsbauernführer ').

The working costs of the Plant Protection Service will be covered by the Reich Food Corporation (' Reichsnährstand '). For investigations of importance to the whole country the Government may grant subsidies.

The provincial agricultural administrations (' Landesbauernschaft ') are responsible for carrying out the instructions of the Plant Protection Service. Each of these administrations will be provided with at least one regional Plant Protection Centre ('Pflanzenschutzamt '). The regional Centres will carry out the orders of the Minister of Agriculture and follow the general instructions given by the ' Biologische Reichsanstalt '. They will be directed by experts having completed their university studies. If necessary, the regional Centres may organise secondary Plant Protection Centres ('Bezirkstelle ') which will operate under their supervision in the different parts of the district.

As far as possible, local Plant Protection Bureaux (' Kreisstelle ') will be established at the local Corporations of all the circumscriptions.

The Minister of Agriculture will convene a general meeting of the Plant Protection Service of the whole country at least once every year. (*Ibid.*, S. 122-123).

*** By Circular of August 1, 1938 relative to the conservation of willow groves, burning of the soil surface in these groves with a view to destroying the parasites noxious to willows is authorized notwithstanding the provisions of paragraph 14 of the Decree of March 18, 1936 for the protection of natural sites. (*Nachrichtenblatt für den Deutschen Pflanzenschutzdienst*, Berlin, Anfang September 1938, 18. Jahrg., Nr. 9, S. 85).

Germany (Prussia). — Decree of August 12, 1938 renders the control of voles [*Arvicola*] compulsory in the district of Münster, Westphalia. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Oktober 1938, Bd. X, Nr. 7, S. 177-178).

Germany (Schaumburg-Lippe). — By Decree of August 31, 1938 relative to the protection of bees, it is prohibited to employ arsenical preparations for fruit trees and other horticultural and agricultural plants especially colza crops, during the flowering season.

This restriction does not apply to arsenical sprayings of the grape vine, potato and asparagus crops. (*Amtliche Pflanzenschutzbestimmungen*, Berlin, 1. Oktober 1938, Bd. X, Nr. 7, S. 178-179).

France. — A Ministerial Decree of July 20, 1938 and instructions annexed thereto states the conditions under which the utilization of hydrocyanic acid gas is authorized for disinfecting plant products, living plants and soils as well as

greenhouses and industrial premises where food products are treated or stored. (*Journal officiel de la République française*, Paris, 24 juillet 1938, LXX^e année, n° 172, p. 8821-8822).

*** By Ministerial Decree of July 25, 1938, during the period between May 15 and September 25 inclusive, potatoes harvested in France may only be dispatched to French overseas territories (with the exception of Morocco where special regulations are in force) if consignments are accompanied by a certificate conformable to the form appended to this Decree.

This certificate will only be granted by duly authorized officers of the Phytosanitary Service on presentation of a copy of the trade invoice or for consignments in which the packing and contents have been recognized as being free from earth and waste which could contain adults, larvae or eggs of the Colorado beetle [*Leptinotarsa decemlineata*].

Article 3 of the Decree of May 10, 1935 [see this *Bulletin*, 1935, No. 8, p. 181] and the Decree of April 20, 1938 [see this *Bulletin*, 1938, No. 8, p. 173] relative to the transport of potatoes are cancelled. (*Bulletin de l'Office de Renseignements agricoles*, Paris, 1^er août 1938, année 1938, n° 15, p. 433).

*** A Ministerial Decree of August 1, 1938 and the instructions annexed thereto lay down the conditions for dusting of potatoes with calcium arsenate. (*Journal officiel de la République française*, Paris, 6 août 1938, LXX^e année, n° 180, p. 9177-9178).

Italy. — The Royal Decree No. 1128 of July 6, 1938 establishes the measures of application of the Royal Decree-Law No. 279 of March 10, 1938 [see this *Bulletin*, 1938, No. 9, pp. 196-197], relative to the control of citrus scale insects during the 1938 campaign. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 2 agosto 1938, anno 79°, n. 174, pp. 3221-3222).

*** By Decree of the Minister of Finance, dated August 5, 1938, the application of the exchange duty at the reduced rate of 0.75 per cent. is extended as from August 20, 1938 to the parasiticides sold in commerce as ' Fruttol ' and ' Radical '. (*Ibid.*, 5 settembre 1938, n. 202, p. 3763).

*** Ministerial Circular No. 309, dated August 30, 1938 lays down regulations for chestnut exports to U. S. A. (*Bollettino Ufficiale del Ministero dell'Agricoltura e delle Foreste*, Roma, 1° ottobre 1938, anno X, n. 19, pp. 1928-1931).

*** By Decree of the Minister of Finance, dated August 30, 1938, the application of the exchange duty at the reduced rate of 0.75 lire per cent. is extended from September 15, 1938, to the parasiticide commercially sold as ' Dachicida Berlese '. (*Gazzetta Ufficiale del Regno d'Italia*, Roma, 3 ottobre 1938, n. 226, p. 4129).

Morocco (French Zone of). — A Decree of August 1, 1938 authorizes the destruction of rabbits which have been causing considerable damage to crops and plantations in a civil control zone of Zemmour. (*Bulletin Officiel*, Rabat, 26 août 1938, XXVII[e] année, n° 1348, p. 1165).

Mexico. — An 'Acuerdo', dated July 16, 1938, delimits in the State of Tamaulipas a new zone where the control of the pink bollworm [*Platyedra gossypiella*] has to be carried out. (*Diario Oficial*, México, 23 de julio de 1938, tomo CIX, núm. 20, pág. 2).

New Zealand. — By Notice No. Ag. 3588 of August 2, 1938 is published the Special Order made by the New Brighton Borough Council on July 18, 1938 declaring silver poplar (*Populus nivea*) a noxious weed in the said Borough. (*The New Zealand Gazette*, Wellington, August 4, 1938, Numb. 58, p. 1776).

Switzerland (Canton of Vaud). — By Decree of the Council of State, dated August 3, 1938 the treatment of potatoes against the second generation of the Colorado beetle [*Leptinotarsa decemlineata*] is declared compulsory throughout the canton which is divided into two zones: a 'zone of compact treatments' and a 'zone of treatments in patches'. In the first zone, the treatment of all potato fields is compulsory. In the second, treatment is compulsory over a minimum area of 500 metres around the larval foci of the Colorado beetle.

Lead arsenate for use in compulsory control in large areas under cultivation and also the anti-Colorado beetle powder for treatment in gardens and fields are supplied free of charge by the Federal Government. Only the products distributed officially may be employed. (*La Terre Vaudoise*, Lausanne, 6 août 1938, XXX[e] année, n° 32, p. 490).

Tunis. — A Decree of August 25, 1938 lays down the list of vine-stocks to be employed in the preliminary replacing of phylloxera-diseased grape vines. (*Journal Officiel Tunisien*, Tunis, 6 septembre 1938, 56[e] année, n° 71, p. 1174).

Uruguay. — By Decree No. 960/937 of August 4, 1938 *Eriophyes oleivorus* causing the citrus disorder known locally as 'tostado o negro de la naranja' is declared to be a pest to national agriculture. (*Diario Oficial*, Montevideo, 18 de agosto de 1938, tomo 132, núm. 9590, pág. 372-A).

RECENT BIBLIOGRAPHY

AIROLDI, Paolo. Influenza di micromiceti sulla germinazione e sullo sviluppo di piante ortensi. *L'Italia Agricola*, Roma, 1938, anno 75, n. 8, pp. 579-587, figg. 1-5.
[*Alternaria brassicae* and *Fusarium bulbigenum* var. *lycopersici* as regards the cauliflower and tomato].

ALLEN, Paul J., [and] GODDARD, David R. Changes in wheat metabolism caused by powdery mildew. *Science*, Lancaster, Pa., 1938, N. S., Vol. 88, No. 2278, pp. 192-193.
[*Erysiphe graminis tritici*].

ANDRUS, C. F. Seed transmission of Macrophomina phaseoli. *Phytopathology*, Lancaster, Pa., 1938, Vol. 28, No. 9, pp. 620-634, figs. 1-5. Literature cited, pp. 633-634.

ARION, G. Lista de produse insecticide și fungicide întrebuințate in combaterea dușmanilor plantelor cultivate, precum și de îngrășăminte chimice, autorizate de Ministerul Agriculturii și Domeniilor, în conformitate cu art. 78 din legea privitoare la organizarea și încurajarea agriculturii din 22 Martie 1937. *Ministerul Agriculturii și Domeniilor. Serviciul de Protecția Plantelor. Nr. 6.* București 1938, 11 pag.

ARION, G. Cărăbușul de mai (Melolontha melolontha L.). *Ministerul Agriculturii și Domeniilor. Serviciul de Protecția Plantelor. Nr. 3.* București 1938, 6 pag., 1 planșă.

ARION, G. Paraziții animali și vegetali declarați periculoși culturilor din România și contra cărora s'au luat măsuri de control fitosanitar. Les parasites animaux et végétaux reconnus nuisibles aux cultures en Roumanie et contre lesquels des mesures de cônfrole phytosanitaire ont été prises. *Ministerul Agriculturii și Domeniilor. Serviciul de Protecția Plantelor. Nr. 5.* București 1938, 19 pag.
[Text in Rumanian and French].

ARION, G. Musca Hessilor sau Cecidomia grâului (Mayetiola destructor Say). *Ministerul Agriculturii și Domeniilor. Serviciul de Protecția Plantelor. Nr. 7.* București 1938, 8 pag., 1 planșă, 1 hartă.

AKAI, Shigeyasu. On the ash figures of leaves of the rice plant grown under a combination-practice of several effective measures for the control of blast disease. *Annals of the Phytopathological Society of Japan*, Tōkyō, 1938, Vol. VII, Nos. 3-4, pp. [173]-192, figs. 1-3. [Literature cited], p. 191.
[In Japanese, with title and summary also in English. — *Piricularia oryzae*].

ASQUITH, Dean. The common red spider and carnation rust. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 546-547.
[*Tetranychus telarius, Uromyces caryophyllinus*].

ASUYAMA, H. New diseases and pathogenes reported recently on the cultivated plants in Japan-IV. *Annals of the Phytopathological Society of Japan*, Tōkyō, 1938, Vol. VII, Nos. 3-4, pp. [231]-236.
[In Japanese, with title also in English].

ASUYAMA, H. On the physiologic specialization of *Puccinia glumarum* (Review). *Annals of the Phytopathological Society of Japan*, Tōkyō, 1938, Vol. VII, Nos. 3-4, pp. [253]-261. [Literature cited], p. 261.
[In Japanese, with title also in English].

AUSTIN, M. D., and ROLFE, Sholto W. The grey squirrel: a review of the present situation. *The Journal of the South-Eastern Agricultural College*, Wye, Kent, 1938, No. 42, pp. 93-98, figs. 1-2. Bibliography, p. 98.
[*Sciurus carolinensis*].

AYYAR, T. V. Ramakrishna. An annotated conspectus of the insects affecting fruit crops in S. India. *The Madras Agricultural Journal*, Coimbatore, S. India, 1938, Vol. XXVI, No. 9, pp. [341]-351. References cited, p. 351.

BAIN, H. F., [and] DEMAREE, J. B. Isolation of the fungus causing the red stele or red core disease of strawberries. *Science*, Lancaster, Pa., 1938, N. S., Vol. 88, No. 2276, pp. 151-152.
[*Phytophthora* sp.].

BALLOU, Charles H. Plagas en los jardines. *El Agricultor Venezolano*, Caracas, 1938, año III, nº 27, págs. 4 a 7, 6 figs.

BARRA, Giuseppe. La fillossera ed i vigneti a piede franco nella zona Vesuviana. *L'Italia Vinicola ed Agraria*, Casalmonferrato, 1938, anno XXVIII, n. 25, pp. 301-303.
[*Dactylosphaera vitifolii*].

BARRONS, Keith C. A method of determining root knot resistance in beans and cowpeas in the seedling stage. *Journal of Agricultural Research*, Washington, D. C., 1938, Vol. 57, No. 5, pp. 363-370, figs. 1-2.
[*Heterodera marioni*].

BERAN, Ferdinand. Zur Kenntnis der Obstbaumkarbolineumemulsionen. III. Teilchengrösse und pflanzenschädliche Wirkung. *Anzeiger für Schädlingskunde*, Berlin 1938, XIV. Jahrg., Heft 8, S. 95-97, Abb. 1-3; Heft 9, S. 109-111, Abb. 4-5.

BIRCH, T. T. C. A synopsis of forest fungi of significance in New Zealand. *New Zealand State Forest Service. Bulletin No. 9*, Wellington, N. Z., 1938, 17 pp.

BISSELL, Theodore. The host plants and parasites of the cowpea curculio and other legume infesting weevils. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 534-536, figs. 1-2. Literature cited, p. 536.
[*Chalcodermus aeneus, C. collaris, C. inaequicollis, Apion crassum, A. decoloratum, A. griseum, A. segnipes, Amblycerus robiniae, Bruchus pisorum*].

BITANCOURT, A[gesilau] A., and JENKINS, A. E. New species, hosts, and distribution records of Elsinoë and Sphaceloma. *Chronica Botanica*, Leiden, Holland, 1938, Vol. IV, No. 4/5, pp. 388-389.

BORESCH, Karl. Über die Blattrandkrankheit der Johannisbeere mit einem Ausblick auf die Entstehung von Mangelchlorosen. *Die Gartenbauwissenschaft*, Berlin 1938, 12. Bd., 2. Heft, S. 176-233, Abb. 1-18. Literaturverzeichnis, S. 232-233.

BORZINI, G[iovanni]. Osservazioni su due specie di *Pythium* parasite delle piante di finocchio (*Foeniculum vulgare* L.). *Bollettino della R. Stazione di Patologia vegetale*, Roma, 1938, anno XVIII, n. ser., n. 2, pp. 185-194, figg. 1-2, tav. III-IV.
[*Pythium* No. 1 and *Pythium* No. 2].

BÖTTCHER, Friedrich Karl. Untersuchungen über den Einfluss von Pflanzenschutzmitteln auf die Bienen. II. Teil: Die Wirkung des Nicotins auf die Bienen. *Die Gartenbauwissenschaft*, Berlin 1938, 12. Bd., 2. Heft, S. 234-262, Abb. 1-8. Literaturverzeichnis, S. 262.

BOURIQUET, G. Nouvelle contribution à l'étude de la lutte contre la « rosette » de l'arachide. *Bulletin Economique*, Tananarive, 1938, nouv. sér., nº 13, p. 55-58, fig. 1-8. Bibliographie, p. 58.
[A virus disease].

BRIEN, R. M. Black root-rot of hops. *The New Zealand Journal of Science and Technology*, Wellington, 1938, Vol. XX, No. 1, pp. 62A-64A, figs. 1-2.
[*Phytophthora cactorum*].

BRUNSON, M. H. Influence of Japanese beetle instar on the sex and population of the parasite Tiphia popilliavora. *Journal of Agricultural Research*, Washington, D. C., 1938, Vol. 57, No. 5, pp. 379-389.
[*Tiphia popilliavora*, a parasite of *Popillia japonica*].

BUA, Gaetano. Contributo alla conoscenza dei parassiti temporanei della mosca delle olive (*Dacus oleae* Gmel.). *L'Olivicoltore*, Roma, 1938, anno XV, n. 9, pp. [7]-9.
[*Eupelmus urozonus, Eurytoma rosae, Eulophus longulus*, etc.].

BUCHANAN, T. S. Annual growth rate of Cronartium ribicola cankers on branches of Pinus monticola in northern Idaho. *Phytopathology*, Lancaster, Pa., 1938, Vol. 28, No. 9, pp. 634-641, fig. 1. Literature cited, p. 641.

CALVINO, Mario. Sistema italiano per distruggere le formiche argentine. *Giornale di Agricoltura della Domenica*, Roma, 1938, anno XLVIII, n. 39, p. 336, fig. 1-4.
[A description of the Scarella method against *Iridomyrmex humilis*].

CAMERON, Ewen. A study of the natural control of the pea moth, *Cydia nigricana*, Steph. *Bulletin of Entomological Research*, London, 1938, Vol. 29, Pt. 3, pp. 277-313, figs. 1-11, pls. VII-VIII. References, pp. 312-313.

CARROLL, J. Mineral oils as insecticides. *The Economic Procedings of the Royal Dublin Society*, Dublin, 1938, Vol. 3, No. 586, pp. 63-74.

CASTELLANI, Ettore. Osservazioni preliminari sulle ruggini del grano nell'altipiano etiopico. *L'Agricoltura Coloniale*, Firenze, 1938, anno XXXII, n. 9, pp. [400]-407, 1 carta, 2 climogrammi. Lavori citati, pp. 406-407.
[*Puccinia graminis tritici, P. triticina* and *P. glumarum* occur in Italian East Africa. The two first mentioned rusts are the most widespread and *P. graminis tritici* is the most serious wheat disease].

CHABOUSSOU, F. Un cas de coaptation sexuelle chez *Lebia grandis* Hentz. *Revue française d'Entomologie*, Paris, 1938, tome V, fasc. 2, p. [57]-64, fig. 1-4.
[An American predator of *Leptinotarsa decemlineata*].

CHAPPELLIER, A. Le piège-chronomètre. *Annales des Epiphyties et de Phytogénétique*, Paris, 1938, nouv. sér., tome IV, fasc. 2, p. [333]-334, fig. 1-4.
[It appears that with this trap it will be possible to obtain important data on the life of small rodents and animals of prey].

CHERIAN, M. C. Mite (Acarina) pests of crops in South India and methods for their control. *Agriculture and Live-stock in India*, Delhi, 1938, Vol. VIII, Pt. V, pp. 537-540, pls. XXXIV-XXXV. References, p. 540.
[*Tetranychus* spp., *Paratetranychus* spp., *Eriophyes* spp.].

CHIAROMONTE, A[lfonso]. Note di entomologia etiopica: l'assenza di *Stephanoderes hampei*, Ferr. nella coltivazioni di caffè. *L'Agricoltura Coloniale*, Firenze, 1938, anno XXXII, n. 9, pp. [398]-399.

CLARKE, G. H. Important weeds of South Australia. *The Journal of the Department of Agricultura of South Australia*, Adelaide, 1938, Vol. XLI, No. 12, pp. 1001-1005, 1 fig., 1 pl. References, p. 1005.
[*Brassica tournefortii, Rapistrum rugosum*].

CONSALVI, Antonio. Considerazioni pratiche tecniche ed economiche sulla lotta contro la peronospora delle viti. *L'Italia Vinicola ed Agraria*, Casalmonferrato, 1938, anno XXVIII, n. 15, pp. 227-229.
[*Plasmopara viticola*].

CORMIO, Raffaele. Cure e risanamento degli alberi colpiti da forme traumatiche. *Rivista di Agricoltura*, Bivio di Cumiana (Torino), 1938, anno 43, n. 15, pp. 87-92, figg. 1-2; n. 16, pp. 134-142, figg. 3-9; n. 17, pp. 171-177, figg. 10-21; n. 18, pp. 216-222, figg. 22-32; n. 19, pp. 244-250, figg. 33-40.

COSTA, A. S., e FORSTER, R. A transmissão mecânica de " vira-cabeça ", for friccão, com suco. *Revista de Agricultura*, Piracicaba, 1938, vol.XIII, n. 5-6,pags. [249]-262, figs. 1-13. Bibliografia, pags. 260-261.
[With summary also in English. — A virus disease of tobacco].

COTTIER, W. Citrus pests: (?) the citrus borer. *New Zealand Journal of Agriculture*, Wellington, 1938, Vol. 57, No. 1, pp. 28-29, figs. 1-3.
[*Aemona hirta*].

COUPAN, G. Matériel pour la lutte contres les ennemis des cultures. *Revue de Viticulture*, Paris, 1938, 45e année, tome LXXXIX, nº 2304, p. 177-183.

CURTIS, K. M., and ALLAN, J. M. Tobacco mosaic in New Zealand. Incidence with reference to commercial practice in glasshouse, seedling-bed, and fields, season 1937-38. *The New Zealand Journal of Science and Technology*, Wellington, 1938, Vol. XX, No. 1, pp. 1A–13A.

DANA, B. F. Resistance and susceptibility to curly top in varieties of squash, Cucurbita maxima. *Phytopathology*, Lancaster, Pa., 1938, Vol. 28, No. 9, pp. 649-656, fig. 1. Literature cited, p. 656.

DAVIES, Cornelius, and SMYTH-HOMEWOOD, G. R. B. Investigations on machinery used in spraying. *The Journal of the South-Eastern Agricultural College*, Wye, Kent, 1938, No. 42, pp. 9-36, figs. 1-12, pls. 1-2.

DAVIS, A. C. *Tarsonemus* spp. attacking mushrooms. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, p. 547.

DELAMARRE DE MONCHAUX. La sortie automnale des doryphores. *Comptes rendus hebdomadaires des séances de l'Académie d'Agriculture de France*, Paris, 1938, tome XXIV, nº 23, p. 825-827.
[*Leptinotarsa decemlineata*].

DE SANTIS, Luis. Una cochinilla argentina poco conocida: « Protargionia larreae », Leonardi. *Revista de la Facultad de Agronomía* (Tercera época), Buenos Aires, 1938, tomo XXI (1936), págs. [225] a 240, figs. 1-5, 1 lám.
[On *Larrea divaricata*, *L. cuneifolia*, *Sophora japonica*, *Manihot tweedieana*, *Aspidosperma* sp., and *Laurus nobilis*].

DI FONZO, Mario A. Cómo se estudian los parásitos criptogámicos del algodonero. *El Campo*, Buenos Aires, 1938, año 22, nº 261, págs. 510 y 511, figs. 1-6.

DI NOLA, F. Si può ridurre il costo della lotta contro gli afidi ? *Giornale di Agricoltura della Domenica*, Roma, 1938, anno XLVIII, n. 39, p. 339.

DIONIGI, Alviero. Sullo svernamento delle ruggini. (Nota II). *Rivista di Patologia Vegetale*, Pavia, 1938, anno XXVIII, nn. 9-10, pp. 401-404.
[*Puccinia*].

DUFRÉNOY, J. Les conceptions actuelles sur les virus du tabac. *Annales des Epiphyties et de Phytogénétique*, Paris, 1938, nouv. sér., tome IV, fasc. 2, p. [267]-279, fig. 1-7. Bibliographie, p. 279.

DYKSTRA, T. P., and WHITAKER, W. C. Experiments on the transmission of potato viruses by vectors. *Journal of Agricultural Research*, Washington, D. C., 1938, Vol. 57, No. 5, pp. 319-334, figs. 1-5. Literature cited, pp. 333-334.

EIFRIG, Hellmut. Verbreitung und Abwehr der Rübennematoden in England. *Die kranke Pflanze*, Dresden 1938, 15. Jahrg., Heft 10, S. 176-178.
[*Heterodera schachti*].

ERRINGTON, Paul. L. Observations on muskrat damage to corn and other crops in central Iowa. *Journal of Agricultural Research*, Washington, D. C., 1938, Vol. 57, No. 6, pp. 415-421.
[*Ondatra zibethica* = *Fiber zibethicus*].

FARRAR, M. D., and FLINT, W. P. Soybean flour as a spray material. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 482-485. Literature cited, p. 485.

FEYTAUD, J[ean]. Les avertissements agricoles dans la lutte contre l'eudémis et la cochylis. *Revue de Zoologie agricole et appliquée*, Bordeaux, 1938, 37e année, nº 3, p. [33]-40, fig. 3-6.
[*Polychrosis botrana* and *Clysia ambiguella*].

FICHT, G. A. Two years of study of the effects of root nematode on the yield of canning tomatoes. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 497-506, figs. 1-2.
[*Heterodera marioni*].

FIKRY, Amin. Watermelon anthracnose. *Ministry of Agriculture, Egypt. Technical and Scientific Service. Mycological Section. Bulletin No. 190*, Cairo, 1938, III + 21 pp., 10 pls. Literature cited, p. 21.
[*Colletotrichum lagenarium*].

FLEMING, Walter E., BAKER, Francis E., and KOBLITSKY, Louis. Effect of applying acid lead arsenate for control of Japanese beetle larvae on the germination and development of evergreen seedlings. *Journal of Forestry*, Washington, D. C., 1938, Vol. 35, No. 7, pp. 679-688, figs. 1-2.
[*Popillia japonica*].

FRICKHINGER, H. W. Die Maulwurfsgrille und ihre Bekämpfung. *Die kranke Pflanze*, Dresden 1938, 15. Jahrg., Heft 10, S. 174-176.
[*Gryllotalpa vulgaris*].

FRIEND, R. B., PLUMB, G. H., and HICOCK, H. W. Notes on the European pine shoot moth in Connecticut. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 506-513. Literature cited, p. 513.
[*Rhyacionia buoliana*].

FROST, S. W. Notes on wettable sulfurs. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, p. 547.

FULTON, Robert A. Sulfur nitrite as a possible insecticide and fungicide. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 545-546. Literature cited, p. 546.

GÄBLER, Hellmuth. Die Bedeutung einiger Wanzenarten als Feinde der Nonne. *Zeitschrift für angewandte Entomologie*, Berlin 1938, Bd. XXV, Heft 2, S. 277-290, Abb. 1-3. Literatur, S. 290.
[*Picromerus bidens*, *Troilus luridus*, *Pentatoma rufipes* as regards *Lymantria monacha*].

GEIGEL HERNÁNDEZ, L. El gusano taladrador del tallo de la caña de azúcar. *El Agricultor Venezolano*, Caracas, 1938, año III, nº 27, págs. [8] a 10, 4 figs.
[*Diatraea saccharalis*].

GIORDANI, Mario, e MALQUORI, Alberto. Materiali argillosi come supporti di anticrittogamici. *La Ricerca Scientifica*, Roma, 1938, ser. II, anno IX, vol. II, nn. 5-6, pp. 231-249, figg. 1-6. Bibliografia, p. 249.

GOIDÀNICH, G[abriele], e AZZAROLI, F. Relazione sulle esperienze di selezione di olmi resistenti alla grafiosi e di inoculazioni artificiali di "Graphium ulmi" eseguite nel 1937. *Bollettino della R. Stazione di Patologia vegetale*, Roma, 1938, anno XVIII, n. ser., n. 2, pp. [149]-178, figg. 1-17.

GOODWIN, W., PIZER, N. H., SALMON, E. S., and WARE, W. M. The control of apple scab: Allington Pippin and Newton Wonder, 1937. *The Journal of the South-Eastern Agricultural College*, Wye, Kent, 1938, No. 42, pp. 37-41. [*Venturia inaequalis*].

GÖSSWALD, Karl. Über Empfindlichkeitunterschiede einiger Ameisenarten gegen Arsen-Frassgifte. *Arbeiten über physiologische und angewandte Entomologie aus Berlin-Dahlem*, Berlin-Dahlem 1938, Bd. 5, Nr. 2, S. 137-154. Literatur, S. 154.
[*Formica* spp., *Lasius* spp., *Tetramorium caespitum*, *Leptothorax acervorum*, *Myrmica rubra ruginodis*].

GOTO, Kazuo. Sclerotium Rolfsii Sacc. in perfect stage. V. Inoculation studies with natural strains, basidiospores, single basidiospore isolates, and some F_1-F_2- and back cross strains obtained by mating. *Annals of the Phytopathological Society of Japan*, Tōkyō, 1938, Vol. VII, Nos. 3-4, pp. [203]-220, figs. 1-2. Literature cited, pp. 218-219.

GURNEY, W. B. Grasshopper swarms. Review of methods of control. *The Agricultural Gazette of New South Wales*, Sydney, 1938, Vol. XLIX, Pt. 8, pp. 431-434. [*Chortoicetes terminifera*].

GUYOT, A. L. Etudes expérimentales sur les Urédinées hétéroïques réalisées au Laboratoire de Botanique de l'Ecole Nationale d'Agriculture de Grignon (Seine-et-Oise) au cours des années 1931 à 1937. *Annales de l'Ecole Nationale d'Agriculture de Grignon*, Paris, 1937, sér. 2, tome I, p. [45]-66, fig. 1. [*Uromyces* spp., *Puccinia* spp., *Melampsora allii-populina*].

GUYOT, A. L. Contribution à l'étude des formes de *Puccinia rubigo-vera* (DC.) Winter 1884 *sensu lato* (1ère note). Observations morphologiques et biologiques sur les formes parasites des *Bromus* (exposé préliminaire). *Annales de l'Ecole Nationale d'Agriculture de Grignon*, Paris, 1937, sér. 2, tome I, p. [67]-74.

HAMILTON, Clyde C. Insecticides applied by autogiro to control cankerworms infecting forested areas. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 513-518. Literature cited, p. 518.
[*Alsophila pometaria*, *Paleacrita vernata*, *Ennomos subsignarius*].

HAYES, William P., and DECOURSEY, J. D. Observations of grasshopper parasitism in 1937. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 519-522. Literature cited, p. 522.
[Parasites of *Melanoplus differentialis* and *M. femur-rubrum*].

HEINZE, K., und PROFFT, J. Zur Lebensgeschichte und Verbreitung der Blattlaus *Myzus persicae* (Sulz.) in Deutschland und ihre Bedeutung für die Verbreitung von Kartoffelviren. *Landwirtschaftliche Jahrbücher*, Berlin 1938, 86. Bd., Heft 3, S. 483-500, Abb. 1-9. Schrifttum, S. 499-500.

HELM, A. Wer betreibt Schädlingsbekämpfung im Obstbau? *Die kranke Pflanze*, Dresden 1938, 15. Jahrg., Heft 9, S. 152-156, 1 Abb.

HELY, P. C. The bronze orange bug: a pest in citrus orchards. *The Agricultural Gazette of New South Wales*, Sydney, 1938, Vol. XLIX, Pt. 7, pp. 378-380, 2 figs.
[*Rhoecocoris sulciventris*].

HILL, L. M., and ORTON, C. R. Microchemical studies of potato tubers affected with blue stem disease. *Journal of Agricultural Research*, Washington, D. C., 1938, Vol. 57, No. 5, pp. 387-392, pls. 1-7. Literature cited, pp. 391-392.
[The origin and etiology of the disease in question are unknown].

HIROE, Isamu (formerly MATSUURA, Isamu). Experimental studies on the saltation in fungi, parasitic on plants. *Memoirs of the Tottori Agricultural College*, Tottori, Nippon, 1937, Vol. V, No. 1, pp. [1]-272, figs. 1-10, pls. I-XXV. [References], pp. 219-240.
[In Japanese, with title and summary in English].

HIXSON, Ephraim. *Paratrioza cockerelli* (Sulc.) in Oklahoma. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, p. 546.

HIXSON, Ephraim. Variation in the susceptibility of brambles to the red-necked cane borer, *Agrilus ruficollis* (F.). *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, p. 546.

HOPP, Henry. The formation of colored zones by wood destroying fungi in culture. *Phytopathology*, Lancaster, Pa., 1938, Vol. 28, No. 9, pp. 601-620, figs. 1-5. Literature cited, pp. 619-620.
[*Fomes applanatus, F. fomentarius, F. fraxinophilus, F. ignarius* and *Polyporus hispidus* on wood of *Populus canadensis* var. *eugenei*].

INDIAN TEA ASSOCIATION. TOCKLAI EXPERIMENTAL STATION. The occurrence and treatment of bark-eating caterpillars and borers. *Memorandum No. 1*, Calcutta, 1938, 4 pp.
[*Arbela dea, A. quadrinotata, Ptochoryctis simblenta, Comocritis pieria*].

ISAAKIDÈS, C. A. Une chenille arpenteuse nuisible à l'olivier d'Hiérapetra, en Crète [*Erannis* (*Hybernia*) *bajaria* Schiff. ab. *sorditaria* Hübn.]. *Annales de l'Institut phytopathologique Benaki*, Kiphissia (Athènes), 1936, année 2, fasc. 2, p. [65]-78, pl. I-VIII.

ITZEROTT, Dorothea. Die Wirkung wuchsstoffhaltiger Substanzen junger Maispflanzen auf das Wachstum von Ustilago zeae. *Archiv für Mikrobiologie*, Berlin 1938, 9. Bd., 3. Heft, S. 368-374. Literatur, S. 374.

JAHNEL, H. Die Kohlhernie. *Die kranke Pflanze*, Dresden 1938, 15. Jahrg., Heft 9, S. 149-152, Abb. 1-2.
[*Plasmodiophora brassicae*].

JANJUA, Nazeer Ahmed. Codling moth in Afghanistan. *Current Science*, Bangalore, 1938, Vol. VII, No. 3, pp. 115-116.
[*Cydia pomonella*].

JARY, S. G., and AUSTIN, M. D. Tests of ovicidal washes against *Tetranychus telarius* L. on hops. *The Journal of the South-Eastern Agricultural College*, Wye, Kent, 1938, No. 42, pp. 60-63. References, pp. 62-63.

JARY, S. G. A new host record for *Anguillulina dipsaci* Kuhn 1858. *The Journal of the South-Eastern Agricultural College*, Wye, Kent, 1938, No. 42, pp. 64-65, 1 fig. Reference, p. 65.
[On *Cheiranthus mutabilis*].

JARY, S. G. Investigations on the insect and allied pests of cultivated mushrooms – XII. Two more Tyroghyphid mites. *The Journal of the South-Eastern Agricultural College*, Wye, Kent, 1938, No. 42, pp. 66-81, figs. 1-8. References, p. 73.
[*Caloglyphus* sp. ? *berlesei*, *Eberhardia* sp.].

JARY, S. G., AUSTIN, M. D., and PITCHER, R. S. The control of big bud mite, *Eriophyes ribis* (Westw.) Nal. by lime sulphur. *The Journal of the South-Eastern Agricultural College*, Wye, Kent, 1938, No. 42, pp. 82-92. References, pp. 91-92.

JONES, Fred Reuel. A seed-borne disease of sweet clover. *Phytopathology*, Lancaster, Pa., 1938, Vol. 28, No. 9, pp. 661-662.
[*Ascochyta caulicola* on *Melilotus*].

KAWAMURA, T. So-called virus diseases of lily in relation to hosts. *Annals of the Phytopathological Society of Japan*, Tōkyō, 1938, Vol. VII, Nos. 3-4, pp. [163]-172, figs. 1-3, pls. III-IV. Literature cited, p. 170.

KONING, Henriëtte C. The bacterial canker of poplars. *Mededeelingen van het Phytopathologisch Laboratorium " Willie Commelin Scholten "*, Baarn, 1938, XIV, pp. 3-42, figs. 1-8, pls. I-II. Literature, pp. 39-42.
[*Pseudomonas rimaefaciens* n. sp.]

KOZHANTSHIKOV, I. W. Physiological conditions of cold-hardiness in insects. *Bulletin of Entomological Research*, London, 1938, Vol. 29, Pt. 3, pp. 253-262, figs. 1-4. References, pp. 261-262.

KRISHNAN, S. [and] GHOSE, T. P. *Derris ferruginea* Benth. from Assam. *Current Science*, Bangalore, 1938, Vol. VII, No. 1, p. 22.

KUMAR, L. S. S. A new phanerogamic parasite of *Andropogon Sorghum* (*Jowar*). *Current Science*, Bangalore, 1938, Vol. VII, No. 1, pp. 19-20, figs. 1-2.
[*Sopubia delphinifolia*].

KUNIKE, G. Die Feststellung des Nährwertes verschiedener Stoffe durch Frassversuche mit Vorratsschädlingen. *Anzeiger für Schädlingskunde*, Berlin 1938, XIV. Jahrg., Heft 9, S. 101-105.

LAMBERTI, Ettore. La " Carpocapsa amplana " (verme delle noci). *Rivista di Agricoltura*, Bivio di Cumiana (Torino), 1938, anno 43, n. 19, pp. [254]-255.

LEPESME, P. Sur le régime et l'importance économique de quelques Trogoderma. *Revue française d'Entomologie*, Paris, 1938, tome V, fasc. 2, p. 104-106.
[*Trogoderma versicolor, T. tarsale, T. granarium*].

LINDQUIST, Juan C. Muerte de manzanos ocasionada por « Phytophthora cactorum ». *Revista de la Facultad de Agronomía* (Terura época), Buenos Aires, 1938, tomo XXI (1936), págs. 195 a 199, figs. 1-2, 1 lám.

LIST, George M. Tests of certain materials as controls for the tomato psyllid, *Paratrioza cockerelli* (Sulc.), and psyllid yellows. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 491-497. Literature cited, pp. 496-497.

LLOSA P., Teobaldo. Investigaciones referentes al " wilt " del algodonero. Estudio preliminar sobre el aislamiento del agente patogeno del " wilt " de peciolos, tallos y raíces de plantas infermas de algodonero. *Ministerio de Fomento. Dirección de Agricultura, Ganadería y Colonización. Boletín No. 13*, Lima, Perú, 1938, págs. 1 a 15, figs. 1-2.
[With summary also in English. — *Verticillium* sp.].

LLOSA, P. Teobaldo. Nuevo metodo para aislar en colonias puras los hongos del tipo Verticillium o Fusarium de plantas atacadas por la " marchitez " o " wilt " del algodonero. *Ministerio de Fomento. Dirección de Agricultura, Ganadería y Colonización. Boletín No. 13*, Lima, Perú, 1938, págs. 17 a 22, fig. 3.
[With title and summary also in English:— 'New method to isolate, in pure colonies, the fungus of the Verticillium or Fusarium type of plants infected with the cotton wilt disease'].

LOEWEL, E. L., und FRIEDRICH, G. Fusikladiumbeobachtungen an eingetüteten Apfelzweigen während der Vegetationsperiode. *Die Gartenbauwissenschaft*, Berlin 1938, 12. Bd., 2. Heft, S. 121-126, Abb. 1. Literaturverzeichnis, S. 126.

LUTHRA, Jai Chand, and BEDI, Kishan Singh. The control of the blight disease of gram by resistant types. *Current Science*, Bangalore, 1938, Vol. VII, No. 2, pp. 45-47, fig. 1.
[*Ascochyta rabiei*].

LUTHRA, Jai Chand, SATTAR, Abdus, and SINGH, Sardul. Occurrence of stem canker disease of sugarcane (*Cytospora sacchari* Butl.) in the Punjab. *Proceedings of the Indian Academy of Sciences*, Bangalore, 1938, Vol. VIII, No. 3, pp. 188-191. References, p. 191.

MALENOTTI, Ettore. Sulla cocciniglia bianca dei pioppi. *Bullettino dell'Agricoltura*, Milano, 1938, anno 72°, n. 41. p. [1].
[On the note of L. Minguzzi on *Chionaspis salicis* (see below)].

MARCOVITCH, S., and STANLEY, W. W. New facts concerning cryolite spray residues. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 480-482. Literature cited, p. 482.

MARSAIS, P[aul]. Les maladies dues aux Botrytis et la viticulture, *Revue de Viticulture*, Paris, 1938, 45° année, tome LXXXIX, n° 2303, p. 145-148.

MARTIN, Charles H. Field notes on the life history of *Hylurgopinus rufipes* (Eich.). *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 470-477, figs. 1-3. Literature cited, p. 477.

MATSUMOTO, Takashi, and HUZIOKA (FUJIOKA), Yasuo. Bacteriophage in relation to Bacterium malvacearum E. F. S. I. Preliminary study. *Annals of the Phytopathological Society of Japan*, Tōkyō, 1938, Vol. VII, Nos. 3-4, pp. [193]-202, figs. 1-2.

MCCULLOCH, Lucia. Leaf blight of iris caused by Bacterium tardicrescens. *Phytopathology*, Lancaster, Pa., 1938, Vol. 28, No. 9, pp. 642-649, figs. 1-2.
[An English description of the causal organism is given].

MESNIL, L. La cécidomyie du chou-fleur dans la région de Saint-Omer. *Annales des Epiphyties et de Phytogénétique*, Paris, 1938, nouv. sér., tome IV, fasc. 2, p. [281]-311.
[*Contarinia torquens* (*C. nasturtii*)].

METZGER, C. H. A new potato disease in Colorado. *American Potato Journal*, Sommerville and New Brunswick, N. J., 1938, Vol. 15, No. 8, pp. 225-230. Literature cited, p. 230.
[*Bacterium solanacearum* ?].

MEZZETTI, Alberto. Risultati di analisi microbiologiche orientative di terreni trattati con arsenito sodico per combattere la cuscuta e alcune erbe infestanti. *Bollettino della R. Stazione di Patologia vegetale*, Roma, 1938, anno XVIII, n. ser., n. 2, pp. 179-184. Bibliografia, p. 184.
[*Cuscuta epithymum*, *Stellaria media*, *Veronica persica*].

MINGUZZI, Luigi, Una infestione mortale di cocciniglie nei pioppi. *Bullettino dell'Agricoltura*, Milano, 1938, anno 72°, n. 40, p. 2.
[*Chionaspis salicis* near Pavia].

MISAKA, Kaduhusa. Studien über den Mechanismus für Abtötung der Eier von *Chilo simplex* Butler mit Nikotinsulfat. Zweite Mitteilung: Über die Beziehung der Verflüchtigung des Nikotinsulfates zu seiner Eierabtötung. *Journal of the Imperial Agricultural Experiment Station*, Nisigahara, Tōkyō, Nippon, 1938, Vol. III, No. 2, pp. 239-274, Abb. I-VII. Literatur, pp. 270-271.

MONASTERO, S. Due gravi infezioni alle fave di Sicilia: "Lixus algirus" L. e "Sitona lineata" F. *Rivista di Patologia Vegetale*, Pavia, 1938, anno XXVIII, nn. 9-10, pp. 405-410.

MUNERATI, O[ttavio]. La debole forza aggressiva della cuscuta nel 1938. Cerchiamo di vederci chiaro. *Giornale di Agricoltura della Domenica*, Roma, 1938, anno XLVIII, n. 43, p. 371.

MUNRO, J. A., and SCHIFINO, Louis A. Potato spraying experiments in North Dakota. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 485-487. Literature cited, p. 487.
[Specially against *Epitrix cucumeris*].

MUNRO, J. A., and SCHIFINO, Louis A. Preliminary studies of wireworms affecting potato tubers in North Dakota. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 487-488.
[*Corymbites aeripennis destructor*].

MUSKETT, A. E. Biological technique for the evaluation of fungicides. I. The evaluation of seed disinfectants for the control of Helminthosporium disease of oats. *Annals of Botany*, London, 1938, N. S., Vol. II, No. 7, pp. 699-715, pl. XXVIII. Literature cited, p. 715.
[*Helminthosporium avenae*].

NEAL, D. C., and HADDON, C. B. A promising wilt-resistant long staple cotton. *Journal of the American Society of Agronomy*, Geneva, New York, 1938, Vol. 30, No. 8, pp. 644-646, figs. 1-2.
[*Fusarium*].

NEWMAN, L. J., and ELLIOTT, H. G. The pea weevil, Bruchus pisorum (Linn.). *Journal of the Department of Agriculture of Western Australia*, Perth, 1938, Vol. 15 (Second Series), No. 2, pp. 156-158, figs. 1-2.

NICOLAS, G[ustave]. Présence d'*Ungulina fomentaria* (Fr.) Pat. sur le platane et sa croissance rapide. *Bulletin trimestriel de la Société mycologique de France*, Paris, 1938, tome LIV, fasc. 1, p. 69.

PECHUMAN, L. L. A preliminary study of the biology of *Scolytus sulcatus* LeC. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 537-543, figs. 1-2. Literature cited, p. 543.

PERCHER, G. Quelques essais sur les soufres et sur les mouillants. *Revue de Viticulture*, Paris, 1938, 45e année, tome LXXXIX, nº 2309, p. 295-300, 2 graphiques.

PETRAK, F. (Referent). Pilze (ohne Schizomyceten und Flechten) 1930. Mit Nachträgen aus früheren Jahren. *Just's Botanischer Jahresbericht*, Berlin 1938, LVIII. Jahrg. (1930), 1. Abtlg., 2. Heft, S. 277-320; 3. Heft, S. 321-570.

PETRI, Lionello. Il mal dell'inchiostro del castagno. *L'Italia Agricola*, Roma, 1938, anno 75, n. 8, pp. 527-532.
[*Phytophthora cambivora*].

PITTMAN, H. A. J. Bacterial blight of beans. *Journal of the Department of Agriculture of Western Australia*, Perth, 1938, Vol. 15 (Second Series), No. 2, pp. 172-177, figs. 1-2.
[*Phytomonas medicaginis* var. *phaseolicola*].

PITTMAN, H. A. J. Leaf rust of stone fruits. *Journal of the Department of Agriculture of Western Australia*, Perth, 1938, Vol. 15 (Second Series), No. 2, pp. 191-193, figs. 1-2.
[*Puccinia pruni-spinosae*].

POLACCO, Francesco, Indagine sulla coltivazione del castagno da frutto in Italia. *Bollettino mensile di statistica agraria e forestale*. Supplemento straordinario alla "Gazzetta Ufficiale" n. 99 del 30 aprile 1938-XVI. Roma, 1938, anno XI, fasc. 4, pp. 340-359, 2 cartine, 1 diagr.
[Statistical information is also given on the plant and animal parasites which, in 1937, attacked chestnut trees in Italy and in particular on the spread of

ink disease (*Phytophthora cambivora*) and the extent of cultivation of the Japanese chestnut (*Castanea crenata*) resistant to this disease].

POISSON, R., et PATAY, R. Sur quelques modalités de la régénération des pattes et des ailes chez la larve du doryphore: *Leptinotarsa decemlineata* Say (Coléoptère Chrysomélide). *Comptes rendus des séances de la Société de Biologie et de ses filiales et associées*, Paris, 1938, tome CXXIX, nº 25, p. 126-128.

PRASAD, H. H. A note on soft rot of pears caused by a species of *Aspergillus*. *The Indian Journal of Agricultural Science*, Delhi, 1938, Vol. VIII, Pt. IV, pp. 549-551, pl. XXV. References, p. 551.
[The causal fungus bears a close resemblance to *A. japonicus*].

PRUTHI, Hem Singh. The distribution, status and biology of codling moth (*Cydia pomonella* L.) in Baluchistan with notes on some other insects infecting apples. *The Indian Journal of Agricultural Science*, Delhi, 1938, Vol. VIII, Pt. IV, pp. 499-547, figs. 1-2, pls. XIX-XXIV. References, p. 519.
[*C. pomonella*, *Spilonota ocellana*, *Euzophera punicella*, *Cacoecia sarcostega*].

PRUTHI, Hem Singh, and BATRA, H. N. A preliminary annotated list of fruit pests of the North-West Frontier Province. *The Imperial Council of Agricultural Research. Miscellaneous Bulletin No. 19*, Delhi, 1938, 18 pp.

PUSSARD, R. Un appareil mobile pour la désinfection des produits végétaux: le camion-laboratoire de la Station de Zoologie agricole et Insectarium d'Antibes. *Annales des Epiphyties et de Phytogénétique*, Paris, 1938, nouv. sér., tome IV, fasc. 2, p. [313]-331, fig. 1-7. Bibliographie, p. 331.

RAABE, A. Parasitische Pilze der Umgebung von Tübingen. Ein Beitrag zur Kryptogamenflora Südwestdeutschlands. Dresden 1938, Bd. 78, Heft 1/2, S. 1-106, Abb. 3-7, Taf. I. Schriftenverzeichnis, S. 102-106.
[Enumeration of 440 species and varieties; 4 species are described as new to science. Latin diagnoses are given].

RADA, German García. La enfermedad de la "podredumbre negra" del camote. *Ministerio de Fomento. Dirección de Agricultura, Ganadería y Colonización. Informe No. 46*, Lima, Perú, 1938, 5 págs., 1 lám.
[*Sphaeronema fimbriatum*].

RĂDULESCU, Anton V. Apariția cancerului laricei in România. *Revista Pădurilor*, București 1938, an. 50, nr. 7-8, pag. [661]-667, fig. 1-4.
[In Rumanian, with titles also in German and French, and summary in French:— 'Das Erscheinen des Lärchenkrebs in Rumänien'. — 'Apparition du chancre du mélèze en Roumanie'. — *Peziza* (*Dasyscypha*) *willkommii*].

RĂDULESCU, E. Combaterea lăcustelor în județul Covurlui (Note dintr' o excursie). *Agricultura Nouă*, Cluj 1938, an. V, no. 9, pag. 337-340, fig. 1.

RAO, L. Narayana. A case of triple parasitism ? *Loranthus* vs. *Viscum* vs. *Viscum*. *Current Science*, Bangalore, 1938, Vol. VII, No. 3, p. 112, figs. A-D.

RAUCOURT, M., TROUVELOT, B., et CASTETS, G. Les résidus d'arsenic sur les pommes et les poires traitées contre le carpocapse. *Annales des Epiphyties et de Phytogénétique*, Paris, 1938, nouv. sér., tome IV, fasc. 2, p. [337]-356, fig. 1.
[*Laspeyresia* (*Cydia*) *pomonella*].

RÉGNIER, Robert. Etat actuel de la question du contrôle des produits antiparasitaires. *Revue de Viticulture*, Paris, 1938, 45e année, tome LXXXIX, nº 2309, p. 300-304.

REGUERAL, F. G. L'huile d'olive comme insecticide. *Fruits et Primeurs de l'Afrique du Nord*, Casablanca, 1938, 8me année, nº 89, p. 245-247.

REID, W. D. Citrus-blast in New Zealand. *The New Zealand Journal of Science and Technology*, Wellington, 1938, Vol. XX, No. 1, pp. 50A-54A, figs. 1-4. References, p. 54A.
[*Pseudomonas syringae*].

REID, W. D. Citrus-canker in New Zealand. *The New Zealand Journal of Science and Technology*, Wellington, 1938, Vol. XX, No. 1, pp. 55A-62A, figs. 1-5. References, p. 62A.
[*Pseudomonas citri*].

RICCHELLO, A. La disinfezione o concia del grano da seme. *L'Agricoltura Sarda*, Cagliari, 1938, anno XVII, n. 3, pp. 80-82.

RICCHELLO, A. La tignola dell'olivo. *L'Agricoltura Sarda*, Cagliari, 1938, anno XVII, n. 4, pp. [98]-101.
[*Prays oleellus*].

RICHARDSON, Charles H., and SEIFERLE, Edwin J. Toxic and repellent properties of some inorganic and organic compounds and mixtures in grasshopper baits. *Journal of Agricultural Research*, Washington, D. C., 1938, Vol. 57, No. 6, pp. 423-432. Literature cited, p. 432.
[*Melanoplus mexicanus mexicanus*].

RIGGS, D. S. On certain habits of elm bark beetles. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 467-469, figs. 1-3. Literature cited, p. 469.
[*Hylurgopinus rufipes*, *Scolytus multistriatus*].

ROARK, R. C. Discussion of the term "derris resinate". *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, p. 545.

ROOS, K. Das Kirschbaumsterben im Baselland. 1. Mitteilung: Die Erscheinungsformen der Krankheit. *Landwirtschaftliches Jahrbuch der Schweiz*, Bern 1938, 52. Jahrg., Heft 5, S. [596]-617, Abb. 1-34, Darst. 1-2. Literaturverzeichnis, S. 617.
[The causes and nature of the disease are as yet unknown].

ROYAUME DE BELGIQUE. – MINISTÈRE DES COLONIES. — BELGIAN GOVERNMENT. – MINISTRY OF COLONIES. V^e^ Conférence internationale pour les recherches antiacridiennes. Bruxelles 1938. Procès-verbaux. Vth International Locust Conference. Brussels 1938. Proceedings. [Bruxelles, 1938], 76 p., 1 carte.
[Text of the proceedings of the meetings of this Conference in French and English; text of the resolutions adopted, also in Italian and Portuguese].

SALMON, E. S., and WARE, W. M. The downy mildew of the hop in 1937. *The Journal of the South-Eastern Agricultural College*, Wye, Kent, 1938, No. 42, pp. 42-46.
[*Pseudoperonospora humuli*].

SALMON, S. C. Generalized standard errors for evaluating bunt experiments with wheat. *Journal of the American Society of Agronomy*, Geneva, New York, 1938, Vol. 30, No. 8, pp. 647-663, figs. 1-5. Literature cited, pp. 662-663.
[*Tilletia*].

SALT, George. Experimental studies in insect parasitism. VI. — Host suitability. *Bulletin of Entomological Research*, London, 1938, Vol. 29, Pt. 3, pp. 223-246, figs. 1-3. Bibliography, pp. 244-246.

SAREJANNI, J. A. La verticilliose du coton en Grèce. *Annales de l'Institut phytopathologique Benaki*, Kiphissia (Athènes), 1936, année 2, fasc. 2, p. [79]-85. Bibliographie, p. 84-85.
[*Verticillium albo-atrum*].

SAREJANNI, J. A. Notes phytopathologiques II. *Annales de l'Institut phytopathologique Benaki*, Kiphissia (Athènes), 1936, année 2, fasc. 2, p. [86]-92, pl. IX. Bibliographie, p. 88, 90.
[Contains:—
1° Un parasite nouveau des olives. [*Septoriella oleicola* n. sp. Latin diagnosis].
2° Maladies nouvelles ou peu connues dues à des Sclerotinias. [*Sclerotinia laxa* and *Botrytis cinerea* on loquat; *Scl. sclerotiorum* on vine].
3° Un nouveau parasite du piment. [*Microdiplodia capsici* n. sp. Latin diagnosis].
4° Une nouvelle maladie de la vigne. [*Pythium de baryanum*].

SCARELLA, Antonio. Sistema italiano per distruggere le formiche argentine. *La Costa Azzurra Agricola-Floreale*, Sanremo, 1938, anno XVIII, nn. 9-10, pp. 162-165, figg. 1-4.
[*Iridomyrmex humilis*].

SCHMIDT, Heinz. Schädliche Blattwespen an Obstbäumen und Beerensträuchern. *Die kranke Pflanze*, Dresden 1938, 15. Jahrg., Heft 10, S. 169-173, Abb. 1-2. [*Pteronidea ribesii, Priophorus padi, Eriocampoides limacina, Neurotoma flaviventris*].

SCHMIDT, Herta. Spätfrostschäden 1938 an Gartengewächsen. *Die kranke Pflanze*, Dresden 1938, 15. Jahrg., Heft 10., S. 167-169, Abb. 1-5.

SCHIMITSCHEK, Erwin. Beiträge zur Forstenentomologie der Türkei. I. *Zeitschrift für angewandte Entomologie*, Berlin 1938, Bd. XXV, Heft 2, S. 291-310, Abb. 1-12.

SCHONBERG, S. Détermination colorimétrique de la roténone. *Annales des Falsifications et des Fraudes*, Paris, 1938, XXXI[e] année, n° 354, p. 290-295. Bibliographie, p. 295.

SCHOPFER, W. H., und BLUMER, S. (Unter Mitwirkung von V. KOCHER). Untersuchungen über die Biologie von Ustilago violacea (Pers.) Fuck. II. Mitteilung: Wirkung des Aneurins und anderer Wuchstoffe vitaminischer Natur. *Archiv für Mikrobiologie*, Berlin 1938, 9. Bd., 3. Heft, S. 305-367, Abb. 1-15. Literatur, S. 366-367.

SCHUCH, Kurt. Laboratoriumsuntersuchungen über den Lebensablauf des Maikäfers (*Melolontha melolontha* L.). *Arbeiten über physiologische und angewandte Entomologie aus Berlin-Dahlem*, Berlin-Dahlem, 1938, Bd. 5, Nr. 2, S. 166-177, Fig. 1-2. Schrifttum, S. 176-177.

SEMPIO, C. La cura di platani fortemente colpiti dalla "Discula platani" (Peck) Sacc. *Rivista di Patologia Vegetale*, Pavia, 1938, anno XXVIII, nn. 9-10, pp. [365]-375, figg. 1-4.

SEMPIO, C. Su un caso sperimentale di netto antagonismo in vivo ("Tilletia Caries"-"Erysiphe graminis" su "Mentana"). *Rivista di Patologia Vegetale*, Pavia, 1938, anno XXVIII, nn. 9-10, pp. 377-384, fig. 1. Bibliografia, pp. 383-384.

SEMPIO, C. Effetto delle alte temperature sul frumento cariato al momento della spigatura. *Rivista di Patologia Vegetale*, Pavia, 1938, anno XXVIII, nn. 9-10, pp. 385-387.
[*Tilletia tritici*].

SEMPIO, C. I succhi virusati quali substrato di culture fungine. *Rivista di Patologia Vegetale*, Pavia, 1938, anno XXVIII, nn. 9-10, pp. 389-391, 1 fig.
[*Thielaviopsis basicola, Trichothecium roseum* and *Aspergillus niger* raised on the juice of healthy tobacco leaves and on that of mosaic diseased leaves showed a much better development on juice from healthy leaves].

SEMPIO, C. Sulla maggiore sensibilità di piante infette al momento della sporificazione del parassita. (Nota preventiva). *Rivista di Patologia Vegetale*, Pavia, 1938, anno XXVIII, nn. 9-10, pp. 393-397, figg. 1-2.
[*Bremia lactucae* on lettuce; *Cystopus candidus* on radish; *Erysiphe graminis* on the wheat 'Rieti'].

SEMPIO, C. Influenza di alcune sostanze, date alle piantine per assorbimento, sullo sviluppo della carie del grano. (Nota preventiva). *Rivista di Patologia Vegetale*, Pavia, 1938, anno XXVIII, nn. 9-10, pp. 399-400.
[*Tilletia tritici*].

SHOTWELL, Robert L. Some problems of the annual grasshopper survey. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 523-533. Literature cited, p. 533.
[*Melanoplus* spp., *Camnula pellucida*, *Ageneotettix deorum*, *Aulocara elliotti*].

SHOTWELL, Robert L. The species and distribution of grasshoppers in the 1937 outbreak. *The Insect Pest Survey Bulletin*, [Washington, D. C.], 1938, Vol. 18, Supplement to No. 6, pp. 385-443. [Mimeographed].
[*Dissosteira longipennis*, *Melanoplus* spp., *Camnula pellucida*, etc.].

SPEYER, W. Die Lebensdauer der Frostspanner-Falter (*Cheimatobia brumata* L.) unter dem Einfluss von Begattung und Eiablage. *Arbeiten über physiologische and angewandte Entomologie aus Berlin-Dahlem*, Berlin-Dahlem 1938, Bd. 5, Nr. 2, S. 155-165. Schriftenverzeichnis, S. 165.

STEVENS, Neil E. Departures from ordinary methods in controlling plant diseases. *The Botanical Review*, Lancaster, Pa., 1938, Vol. IV, No. 8, pp. 429-445. Literature cited, p. 443-445.

STIRRETT, Geo. M. A field study of the flight, oviposition and establishment periods in the life cycle of the European corn borer, *Pyrausta nubilalis* Hbn., and the physical factors affecting them. II. The flight of the European corn borer. Annual cycle of flight. Daily rhythm of flight. Flight to light trap. *Scientific Agriculture*, Ottawa, Canada, 1938, Vol. XVIII, No. 8, pp. 462-484, figs. 1-3. References, pp. 483-484.

STIRRETT, Geo. M. A field study of the flight, oviposition and establishment periods in the life cycle of the European corn borer, *Pyrausta nubilalis* Hbn., and the physical factors affecting them. III. The flight of the European corn borer. The influence of the physical factors upon flight. *Scientific Agriculture*, Ottawa, Canada, 1938, Vol. XVIII, No. 9, pp. 536-557. figs. 1-13. References, pp. 556-557.

SUZUKI, Hashio. Studies on bacteria internal of rice seeds. VI. Influence of hydrogen in concentration of the culture media on the thermal death time. *Annals of the Phytopathological Society of Japan*, Tōkyō, 1938, Vol. VII, Nos. 3-4, pp. [221]-230, figs. 1-2. [Literature cited], p. 229.
[In Japanese, with title and summary also in English].

TASUGI, Heizi, and KUMAZAWA, Masatake. Phytophthora rot of lily. *Journal of the Imperial Agricultural Experiment Station*, Nisigahara, Tōkyō, Nippon, 1938, Vol. III, No. 2, pp. 207-238, figs. 1-3, pls. XXVI-XXVIII. Literature cited, pp. 234-235.
[In Japanese, with title and summary also in English. — *Phytophthora parasitica* and *Phyt. cactorum*].

THALENHORST, Walter. Die Puppengewicht-Eizahlrelation der Forleule (*Panolis flammea* Schiff.). *Anzeiger für Schädlingskunde*, Berlin 1938, XIV. Jahrg., Heft 9, S. 106-109, Abb. 1-2. Schrifttum, S. 109.

THIELMANN, K. Die Nematiden der Lärche, eine bionomisch, ökologisch forstwirtschaftliche Untersuchung. *Zeitschift für angewandte Entomologie*, Berlin 1938, Bd. XXV, Heft 2, S. 169-214, Abb. 1-20, Taf. 1. Literaturverzeichnis, S. 212-214.
[*Nematus erichsoni, Lygaeonematus wesmaeli, L. laricis, Platycampus pectoralis, P. ovatus*, etc.].

TISCHLER, W. Zur Ökologie der wichtigsten in Deutschland an Getreide schädlichen Pentatomiden. I. *Zeitschrift für Morphologie und Ökologie der Tiere*, Berlin 1938, 34. Bd., 3. Heft, S. [317]-366, Abb. 1-14. Schrifttum, S. 365-366.
[*Eurygaster maura, Aelia acuminata, Palomena prasina, Dolycoris baccarum, Carpocoris pudicus fuscispinus*].

TODD, J. N. Effective duration of toxicity to the Mexican bean beetle of derris deposits on foliage. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 478-479. Literature cited, p. 479.
[*Epilachna varivestis*].

TURNER, Neely, and WALKER, G. L. Control of onion thrips. *Journal of Economic Entomology*, Menasha, Wisconsin, 1938, Vol. 31, No. 4, pp. 489-491. Literature cited, p. 491.
[*Thrips tabaci*].

VAHEEDUDDIN, Syed. The production of a new physiologic race of Sphacelotheca sorghi. *Phytopathology*, Lancaster, Pa., 1938, Vol. 28, No. 9, pp. 656-659, fig. 1.

VAN LUIJK, A. Antagonism between various micro-organisms and different species of the genus Pythium, parasitizing upon grasses and lucerne. *Mededeelingen van het Phytopathologisch Laboratorium " Willie Commelin Scholten "*, Baarn, 1938, XIV, pp. 43-83, photos 1-11. Literature, p. 83.

VAN STENIS, C. G. G. J. *Gynura crepidioides* Bth. — A recently introduced weed in S. E. India. *Current Science*, Bangalore, 1938, Vol. VII, No. 1, p. 21.

VAUGHAN, Edward K. A race of Ustilago avenae capable of infecting Black Mesdag oats. *Phytopathology*, Lancaster, Pa., 1938, Vol. 28, No. 9, pp. 660-661.

VIENNOT-BOURGIN, G. Notes biologiques sur quelques Ustilaginées nouvelles ou peu connues en France. Contribution à l'étude cryptogamique du Bassin de la Seine (13e note). *Annales de l'Ecole Nationale d'Agriculture de Grignon*, Paris, 1937, sér. 2, tome I, p. [175]-203, fig. 1-6.
[*Melanotaenium hypogaeum, M. cingens, Tuburcinia melicae, Tilletia olida*].

NOTES

XVIIIth International Congress of Agriculture. — The Agenda of this Congress, which will be held at Dresden, Germany from June 6 to 12, 1939, includes *inter alia* the following subjects:

Present state of the control of the Colorado beetle (*Leptinotarsa decemlineata*).

Degeneration diseases of cultivated plants, particularly the potato.

Modern control methods for grape-vine pests; organization, means, apparatus and implements.

Prof. ALESSANDRO BRIZI, *Segretario generale dell'Istituto, Direttore responsabile.*

PRINTING OFFICE ' CARLO COLOMBO ' — ROME, DECEMBER 12, 1938.

BOOKS PRESENTED TO THE LIBRARY OF THE INTERNATIONAL INSTITUTE OF AGRICULTURE

Allemagne. Reichsnährstand. Im Dienste der Nahrungsfreiheit. Vorträge anlässlich der Vortragstagung des Reichsnährstandes in Gemeinschaft mit dem Forschungsdienst (Reichsarbeitsgemeinschaften der Landbauwissenschaft). Januar 1936. Berlin, [1936]. 200 p. (Vorträge des Reichsnährstandes, Bd. 1.).

Bender, E. Die Kontingentierung der deutschen Roggen- und Weizenmühlen. Berlin, T. Weicher (K. Kaehler), [1938]. 108 p.

Buenos Aires. Universidad. Instituto de sociedades comerciales y seguros. La explotación del seguro y su regimen legal. Estadisticas argentinas hasta 1936 inclusive. Legislación extranjera. Buenos Aires, Impr. de la Universidad, 1938. XII, 374 p.

Buyssens, A. Plantes vivaces. Utilisation, culture. Bruxelles, A. De Boeck, 1937. 250 p.

Caproni, F. Primi risultati di una bonifica in brughiera. Memoria letta alla Regia Accademia dei Georgofili di Firenze l'11 aprile 1937, XV. Milano, Istituto grafico Bertieri, 1938. 285 p.

Cardinali, A. Analisi estimative delle principali colture erbacee e arboree. Novara, Tip. succ. frat. Miglio, 1938. 111 p.

Cillis, E. de e L. Leggieri. Il terreno agrario. Roma, Opera Nazionale Combattenti, [1938]. (Collana agraria dell'Opera Nazionale Combattenti, 2).

Connell, I. The agricultural holdings (Scotland) acts, 1923 and 1931. 3rd edition by Charles G. Connell. London, W. Hodge & C., 1938. 308 p.

Convegno nazionale dei pastori, 1°r, Rome, 1937. Vita e problemi dei pastori d'Italia. Atti, relazioni e discussioni del I° Convegno nazionale dei pastori, Roma, 19 dicembre XVI. [Roma, Arte della stampa, 1938]. 179 p. (Confederazione Fascista dei lavoratori dell'agricoltura. Federazione Nazionale Fascista maestranze specializzate agricole, zootecniche, forestali).

Culpin, C. Farm machinery. London, C. Lockwood, 1938. 405 p. (Lockwood's agricultural and horticultural handbooks).

Eckstein, O., A. Bruno, I. W. Turrentine. Signes de manque de potasse. Berlin, Verlagsgesellschaft für Ackerbau, 1937. XII, 235 p. [Title and text in German and English].

Fensch, H. L., K. Padberg. Eigenverbrauch und Marktleistung der deutschen Landwirtschaft. Berlin, Reichsnährstand Verlags-Ges. m. b. H., [1938]. 185 p.

Flahault, Ch. La distribution géographique des végétaux dans la région méditerranéenne française. Paris, P. Lechevalier, 1937. XI, 180 p. (Encyclopédie biologique, 18).

Giardelli, R. Saggio di una bibliografia generale sulla Corsica. Genova, « Giornale storico e letterario della Liguria », 1938. 170 p. (Estratto dal Giornale storico e letterario della Liguria, anni 1931-1937).

Giovine, D. Igiene e malattie del bestiame con cenni sulle malattie più comuni nell'Africa italiana. Torino, Unione tip.-editrice torinese, 1938. X, 381 p. (La nuova agricoltura d'Italia. Enciclopedia agraria diretta dal Sen. Arturo Marescalchi, [v. 9].)

Helbeck, G. Die Kapitalfrage im ländlichen Siedlungswesen. Emsdetten (Westf.), H. & J. Lechte, 1938. [7], 103 p.

Hodson, H. V. Slump and recovery, 1929-1937. A survey of world economic affairs. London, Oxford university press, 1938. viii, 484 p.

Istituto nazionale di economia agraria. Monografie di famiglie agricole. v. 14. Contadini della montagna toscana (Garfagnana, Pistoiese, Romagna Toscana). Roma, [Tip. Failli]. 1938, 251 p. (Studi e monografie, n. 14). (Osservatorio di economia agraria per la Toscana).

Istituto nazionale di economia agraria. Lo spopolamento montano in Italia. Indagine geografico-economico-agraria a cura del Comitato per la geografia del Consiglio Nazionale delle Ricerche e dell'Istituto Nazionale di economia agraria. v. 8. Giusti, Ugo. Relazione generale. Roma, [Tip. Failli]. 1938. 251 p. (Studi e monografie, n. 16).

Istituto nazionale di economia agraria. Studi su trasformazioni fondiarie. v. 3. Risultati tecnici ed economici di alcune bonifiche siciliane. (Osservatorio di economia agraria per la Sicilia). Roma, [Tip. Failli], 1938. 157 p. (Studi e monografie, n. 11).

Medici, L. L'ordinamento sindacale-corporativo dell'agricoltura. Roma, Soc. An. tip. editrice Sallustiana, 1937. 63 p. (C. F. P. A. Sindacato nazionale fascista tecnici agricoli).

Mexique. Dirección general de estadistica. Primer censo ejidal, 1935. [México], D. A. P. P. [1937-1938]. 7 v.

Moulik, M. M. La politica finanziaria britannica in India. Bologna, N. Zanichelli, 1938. [13], 238 p. (Raccolta di studi a cura dell'Istituto di politica economica e finanziaria della R. Università di Roma)

Oxford. University. Department of forestry. Forest bibliography to 31st December 1933. Part 3. C. Forest protection. Oxford, 1938. 274 p.

Porzelt, H. Der deutsche Bauer in Rio Grande do Sul. [Ochsenfurt am Main, Fritz & Rappert, 1937]. 110 p.

Richter, K. Praktische Viehfütterung. Neuzeitliche Gestaltung der Fütterung von Rindvieh, Schafen, Pferden und Schweinen. Stuttgart, E. Ulmer, [1938]. 69 p. (Tierzuchtbücherei hrsg. von W. Zorn).

Serban, M. L'enseignement agronomique supérieur; son but, ses méthodes, son organisation et son programme. Rapport présenté au 5e Congrès international de l'enseignement agricole. Cluj, Tip. « Cartea românească », 1937. 117 p. (Bulletin de l'Académie des hautes études agronomiques de Cluj. Supplément au v. 6).

Szende, S. Maktspelet kring Donau. Stockholm, Kooperativa förbundets bokförlag, [1938]. 321 p. [The struggle for economic interests in the Danubian Basin].

Tallarico, Giuseppe. La vita degli alimenti. Firenze, G. C. Sansoni, 1938. XIII, 346 p.

Taylor, T. H. C. The biological control of an insect in Fiji. An account of the coconut leafmining beetle and its parasite complex. London, Imperial institute of entomology, 1937. X, 12-239, [23] p.

Union syndicale de l'huilerie française. Paris. Les marchés des matières grasses en 1937. Paris, [1938].

Verband pommerscher landwirtschaftlicher Genossenschaften, e. V. Stettin. Jahrbuch 1936. [Stettin, Pommersche Reichspost, 1937]. 45 p.

Wirz's Schreib-Kalender für schweizerische Landwirte auf das Jahr 1939. 45. Jg. Hrsg. von E. Laur. Aarau, Verlag Wirz & Co., [1938].

Wood, J. G. The vegetation of South Australia. Adelaide, F. Trigg, Govt. printer, 1937. 164 p. (Handbooks of the flora and fauna of South Australia, issued by the South Australian branch of the British science guild).

Wutz, A. T. Alpenländische Milchwirtschaft. Berlin, Reichsnährstand Verlags-Ges. m. b. H., [1938]. XV, 133 p. (Studiengesellschaft für Nationalökonomie. Institut für bäuerliche Rechts- und Wirtschaftsordnung. Reihe B: Deutsche und fremdvölkische Landwirtschaft Bd. 1).

Zamba, P. I cereali; dai campi al molino. Guida pér la loro conoscenza tecnica e valutazione commerciale. Milano, U. Hœpli, 1938. XII, 171 p.

OTHER PUBLICATIONS ISSUED BY THE INTERNATIONAL INSTITUTE OF AGRICULTURE

A complete list of the publications will be sent on request.

Actes de la Conférence internationale pour l'organisation de la lutte contre les sauterelles. Rome, 28-31 octobre 1920. (1921, 171 pp., 8vo) . . . . . **15 lire**

The Loss to Agriculture caused by Factory Fumes. Lectures given at the International Institute of Agriculture by Professor H. CRISTIANI, Geneva, and Professor Dr. J. STOKLASA, Prague. (1927, 26 pp., 3 figs., 25 pls., 8vo) . . . **15** »

Actes de la Conférence internationale pour la protection des plantes. Rome, 10-16 avril 1929. (1929, 201 pp., 8vo) **25** »

La législation du commerce des plantes. (1938, XVI + 364 pp., 8vo). . . . . **35** »

INTERNATIONAL YEARBOOK OF AGRICULTURAL STATISTICS, 1937-38

(1938, XXXVI + 1014 pp., 8vo).

PRICE: **100 lire.** — CLOTH-BOUND: **110 lire.**

FARM ACCOUNTANCY STATISTICS FOR 1934-35

(1938, XX + 96 pp., 8vo).

PRICE: **30 lire.**

The prices of all publications issued by the International Institute of Agriculture include postage.

NEW QUARTERLY PUBLICATION:—

INTERNATIONAL BIBLIOGRAPHY OF AGRICULTURAL ECONOMICS

Vol. I, No. 1 (October, 1938).

ANNUAL SUBSCRIPTION: **30 lire.**

INTERNATIONAL REVIEW OF AGRICULTURE

Published monthly and incorporating:—

(1) **Monthly Bulletin of Agricultural Economics and Sociology;**
(2) **Monthly Crop Report and Agricultural Statistics;**
(3) **Monthly Bulletin of Agricultural Science and Practice;**
(4) **International Bulletin of Plant Protection.**

ANNUAL SUBSCRIPTION	* 125	lire
SEPARATE NUMBERS, EACH	** 14	»

* For Italy and Italian Colonies 100 lire.
** For Italy and Italian Colonies 10 lire.

Special subscription for each of the ***four reprints*** *of the INTERNATIONAL REVIEW OF AGRICULTURE:—*

(1) **Monthly Bulletin of Agricultural Economics and Sociology.**	ANNUAL SUBSCRIPTION	45 (a)	**lire**
	SEPARATE NUMBERS..	5 (b)	»
(2) **Monthly Crop Report and Agricultural Statistics.**	ANNUAL SUBSCRIPTION	45 (a)	»
	SEPARATE NUMBERS..	5 (b)	»
(3) **Monthly Bulletin of Agricultural Science and Practice.**	ANNUAL SUBSCRIPTION	45 (a)	»
	SEPARATE NUMBERS..	5 (b)	»
(4) **International Bulletin of Plant Protection.**	ANNUAL SUBSCRIPTION	40 (a)	»
	SEPARATE NUMBERS..	4 (c)	»

(a) For Italy and Italian Colonies 36 lire.
(b) For Italy and Italian Colonies 4 lire.
(c) For Italy and Italian Colonies 3.50 lire.

All **subscriptions** and **remittances** for the publications of the Institute should be made direct to the

INTERNATIONAL INSTITUTE OF AGRICULTURE

Villa Umberto I. ROME, Italy.

The prices of all publications issued by the International Institute of Agriculture include postage.